



COGNITIVE FUNCTION FORM

ID NUMBER:

CONTACT YEAR:

FORM CODE:

VERSION: A 01-22-90

LAST NAME:

INITIALS:

Public reporting burden for this collection of information is estimated to average 2 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information including suggestions for reducing this burden to Reports Clearance Officer, PHS, 721-H Hubert H. Humphrey Bldg., 200 Independence Ave. SW, Washington, D.C. 20201, Attn. PRA; and to the Office of Management and Budget, Paperwork Reduction Project (OMB 0925-0281), Washington, D.C. 20503.

PART A: DELAYED WORD RECALL

PLACE A CHECK IN THE COLUMN TO THE RIGHT OF EACH WORD AFTER THE PARTICIPANT HAS READ IT ALOUD AND USED IT IN A SENTENCE.

PLACE A CHECK IN THE 2ND COLUMN TO THE RIGHT OF EACH WORD AFTER THE PARTICIPANT HAS READ IT ALOUD AND USED IT IN A SENTENCE THE SECOND TIME.

AFTER THE COMPLETION OF THE DIGIT SYMBOL TEST, ASK THE PARTICIPANT TO RECALL THE 10 WORDS ORIGINALLY GIVEN:

CHECK OFF ALL THE WORDS RECALLED WITHIN 60 SECONDS.

	<u>FIRST TIME</u>	<u>SECOND TIME</u>		<u>DELAYED WORD RECALL</u>
chimney	_____	_____	book	_____
salt	_____	_____	button	_____
harp	_____	_____	chimney	_____
button	_____	_____	finger	_____
meadow	_____	_____	flower	_____
train	_____	_____	harp	_____
flower	_____	_____	meadow	_____
finger	_____	_____	rug	_____
rug	_____	_____	salt	_____
book	_____	_____	train	_____

START STOP WATCH. RECORD VERBATIM. DO NOT CORRECT ERRORS. IF PARTICIPANT STOPS, ENCOURAGE FURTHER RESPONSES. ALLOW 60 SECONDS FOR EACH LETTER. THE NEXT LETTER IS NOT GIVEN UNTIL THE ENTIRE 60-SECOND PERIOD HAS PASSED.

F

A

S

1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
13.	_____	_____	_____
14.	_____	_____	_____
15.	_____	_____	_____
16.	_____	_____	_____
17.	_____	_____	_____
18.	_____	_____	_____
19.	_____	_____	_____
20.	_____	_____	_____

CNF SCORING SUMMARY

PART A: DELAYED WORD RECALL

ADD UP THE CHECK MARKS IN COLUMN 3, PAGE 1 AND ENTER THE TOTAL NUMBER OF RECALLED WORDS BELOW:

1. TOTAL WORDS RECALLED (CNFA, Q.1):

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PART B: DIGIT SYMBOL SUBSTITUTION

APPLY THE DSS SCORING TEMPLATE TO THE RESPONSES ON PAGE 2 AND ENTER THE NUMBER OF CORRECT SYMBOLS BELOW:

2. TOTAL CORRECT SYMBOLS (CNFA, Q.2):

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APPLY THE DSS SCORING TEMPLATE TO THE RESPONSES ON PAGE 2 AND ENTER THE NUMBER OF INCORRECT SYMBOLS BELOW:

3. TOTAL INCORRECT SYMBOLS (CNFA, Q.3):

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PART C: WORD FLUENCY

ADD UP THE TOTAL NUMBER OF WORDS LISTED IN COLUMNS F, A, AND S ON PAGE 3, AND ENTER THAT TOTAL BELOW:

4. TOTAL WORDS LISTED (CNFA, Q.4):

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PART D: ADMINISTRATIVE INFORMATION

5. DATE OF DATA COLLECTION (CNFA, Q.5):

		/			/		
month			day			year	

6. INTERVIEWER CODE NUMBER (CNFA, Q.6):

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INSTRUCTIONS FOR THE COGNITIVE FUNCTION WORKSHEET
CNF, Version A, 01/22/90
Prepared 01/23/90

GENERAL INSTRUCTIONS

1. The Digit Symbol Substitution Task (DSS) sheet remains unattached from the CNF form until completed by the participant. Complete the header information on both the CNF form and the DSS prior to the clinic visit.
2. Minimize extraneous noise in the testing environment as this may be distracting and affect test results.
3. The interviewer must sit quietly and minimize any movements to avoid distracting the participant.
4. Stopwatches/clocks are necessary to time all of the components of the cognitive function exam. The preferred option is a clock in clear view on the table or wall, allowing the interviewer to subtly glance at it to keep track of time. Hand-held chronometers can also be used. All efforts should be made to minimize the participant's awareness of the timing device to avoid producing anxiety and affecting test results.
5. Tape recorders cannot be used during the administration of the cognitive function forms.
6. Most participants will feel challenged; however, some will feel insecure and others possibly hostile. It is important for the interviewer's attitude to be friendly, non-threatening, reassuring and supportive throughout the tests. Interviewers should be sensitive to provide positive reinforcement at the end of each segment if appropriate.
7. Participants are often curious as to how well they did. Although scoring does not take place during the tests, the interviewer should reassure each participant who asks that he/she did as well as everybody else.

PART A: DELAYED WORD RECALL

8. READ TO PARTICIPANT:

"This portion of the ARIC exam is to record your ability to remember words and symbols. It is like a word game or puzzle, but it is an important part of the exam."

"I'm going to show you some words that I'd like you to remember. Please read along with me each word on the card, repeat the word out loud and then use it in a sentence which conveys the meaning of the word. Do not use words from a previous card in your sentence."

9. SAY EACH WORD AS YOU SHOW THE PARTICIPANT THE DELAYED WORD RECALL FLASH CARDS. This is to avoid problems with visually impaired or illiterate participants being treated differently.

Encourage the participants to form sentences that convey the meaning of the word.

For example, do not allow sentences like "The chimney is nice", but encourage statements like, "The smoke went up the chimney".

10. NO WORD LINKAGE IS ALLOWED. EACH SENTENCE MUST CONTAIN ONLY THE WORD ON THE CARD AND NOT INCLUDE PREVIOUS WORDS TO BE RECALLED.

SHOW THE CARDS, ONE AT A TIME.

If after repeating the first word the participant has difficulty constructing a sentence, PROVIDE THE FOLLOWING EXAMPLE:

"The smoke went up the chimney."

11. PLACE A CHECK IN THE COLUMN TO THE RIGHT OF EACH WORD AFTER THE PARTICIPANT HAS READ IT ALOUD AND USED IT IN A SENTENCE. When all 10 words have been read and made into a sentence, ask the participant to REPEAT THE PROCESS. When repeating the list, the participant may use the same sentence or form a different sentence.

READ TO THE PARTICIPANT:

"To help you remember these words, I would like to have you say each word again and use it in a sentence. You may use the same sentence or make up another one."

12. PLACE A CHECK IN THE 2ND COLUMN TO THE RIGHT OF EACH WORD AFTER THE PARTICIPANT HAS READ IT ALOUD AND USED IT IN A SENTENCE THE SECOND TIME.
13. When this process is completed, GO TO PART B: THE DIGIT SYMBOL TEST.

PART B: DIGIT SYMBOL SUBSTITUTION (DSS) TASK INSTRUCTIONS

14. DISCREETLY PICK UP THE STOPWATCH.
15. HAND THE PARTICIPANT A PENCIL WITHOUT AN ERASER. PLACE THE DIGIT SYMBOL FORM IN FRONT OF THE PARTICIPANT, POINT TO THE KEY ABOVE THE TEST ITEMS AND READ:

"Look at these boxes. Notice that each has a number in the upper part and a special mark in the lower part. Each number has its own mark."

16. POINT TO 1 AND ITS MARK, THEN TO 2 AND ITS MARK.

"Now look down here where the boxes have numbers in the top part, but the squares at the bottom are empty."

17. POINT TO THE SAMPLE ITEMS.

"You are to put in each of the empty squares the mark that should go there, like this:"

POINT TO THE FIRST SEVERAL SAMPLE SPACES.

"Here is a 2; the 2 has this mark."

POINT TO THE FIRST SAMPLE ITEM, THEN TO THE MARK BELOW THE 2 IN THE KEY.

"So I put it in this square, like this."

WRITE IN THE SYMBOL IN THE FIRST SAMPLE SQUARE. THEN SAY

"Here is a 1; the 1 has this mark."

POINT TO THE SECOND SAMPLE ITEM, THEN TO THE MARK BELOW THE 1 IN THE KEY.

"So I put it in this square."

WRITE IN THE SYMBOL IN THE SECOND SQUARE. THEN SAY

"This number is 3; the 3 has this mark."

POINT TO THE THIRD SAMPLE ITEM, THEN TO THE MARK BELOW THE 3 IN THE KEY.

So I put it in this square.

WRITE IN THE SYMBOL.

18. AFTER MARKING THE FIRST THREE SAMPLES ITEMS, SAY:

"Now you fill in the squares up to this heavy line."

19. NOTE: If the participant makes an error on a Sample item, correct the error immediately and review the use of the Key. Continue to help (if necessary) until the seven Sample items have been filled in correctly. Do not proceed with the test until the participant clearly understands the task. When the participant fills in a Sample item correctly, offer encouragement by saying

"Yes or Right,"

and finally,

"Yes, now you know how to do them."

20. During the Sample exercise, look to see if a left-handed participant blocks or partially blocks the Key when filling in the marks. If this occurs, place a separate Digit Symbol form next to the participant's worksheet on the participant's right-hand side so that the extra Key is aligned with the one blocked by the participant's hand. Have the participant use the separate Key to complete the Sample items and to take the actual test.

21. WHEN THE SAMPLE EXERCISE HAS BEEN COMPLETED SUCCESSFULLY SAY,
"When I tell you to start, you do the rest of them."
22. POINT TO THE FIRST TEST ITEM AND SAY,
"Begin here and fill in as many squares as you can, one after the other, without skipping any. Keep working until I tell you to stop. Go as fast as you can without making mistakes. If you make a mistake, do not erase. Put your new answer over the error."
23. SWEEP ACROSS THE FIRST ROW WITH YOUR FINGER AND SAY,
"When you finish this line, go on to this one."
AND POINT TO THE FIRST ITEM IN ROW 2.
24. SAY "Go ahead,"
AND BEGIN TIMING. NO SKIPS ARE ALLOWED. IF THE PARTICIPANT OMITTS AN ITEM OR STARTS TO DO ONLY ONE TYPE (e.g., only the 1s) SAY,
"Do them in order. Don't skip any."
25. POINT TO THE FIRST ITEM OMITTED AND SAY,
"Do this one next."
26. IF THE PARTICIPANT GETS TO THE END OF A LINE AND STOPS, SAY
"Please go on to the next line."
27. GIVE NO FURTHER ASSISTANCE EXCEPT (IF NECESSARY) TO REMIND THE PARTICIPANT TO CONTINUE UNTIL INSTRUCTED TO STOP.
28. Timing must be precise on this test. AT THE END OF 90 SECONDS, SAY
"That is all we have time for. Thank you.
Nobody is able to do all of them."
29. AFTER THE COMPLETION OF THE DIGIT SYMBOL TEST, ASK THE PARTICIPANT TO RECALL THE 10 WORDS ORIGINALLY GIVEN AS FOLLOWS:
"Please tell me the words that you recall from the first task when you were asked to read several words and use them in a sentence."
30. ONCE THESE INSTRUCTIONS HAVE BEEN GIVEN, START THE STOPWATCH. Use the stopwatch discreetly to avoid creating anxiety or a sense of time pressure.
31. USING PAGE 1, COLUMN 3 OF THE WORKSHEET, CHECK OFF ALL THE WORDS RECALLED WITHIN 60 SECONDS.

32. IF THE PARTICIPANT STOPS, ENCOURAGE FURTHER RESPONSES. When the respondent indicates that he/she cannot remember any more words, or after 60 seconds, READ:

"That will be fine. Thank you. Nobody is able to remember all these words."

PART C: WORD FLUENCY

33. EXPLAIN THE RULES TO THE PARTICIPANT AS FOLLOWS:

"I will say a letter and you are to tell me all the different words you can think of beginning with that letter. Leave out proper names (like Ellen). They must be different words, not the same word with different endings (for example, give, gives, and giving would be considered the same word, but give and gave are okay.) Are you ready? Tell me words that start with __. Go ahead, I will tell you when to stop."

34. START STOP WATCH. RECORD VERBATIM. DO NOT CORRECT ERRORS.

35. If the participant cannot think of any more words, sit quietly by and wait 15 seconds. AFTER 15 SECONDS OF SILENCE ASK,

"Can you think of anything else that begins with the letter __?"

Do not stop the test until the entire 60 seconds is over.

36. If the participant repeats a word or makes an error (as an example, gives a name), simply say:

"That's okay; just go on."

Under no circumstances should you ever interrupt the exam to make a clarification.

37. While recording the words, if you cannot keep up with the words being listed and you miss a word, but are certain that the participant produced an acceptable answer, place an X on the line to indicate the participant should receive credit for the word.

38. Allow 60 seconds for each letter. The next letter is not given until the entire 60 second period has passed. At the end of the third letter, SAY:

"That is all we have to do. Thank you.
You did well."

39. After the participant has left the room, proof all the responses for readability. Draw a single straight line through any duplicate responses. Clarify any words that may have been unclear during the time the test was being given. If you are unable to spell the word, write it out phonetically.

40. Check any ambiguous words in the dictionary only after the participant has left the room.

CNF SCORING SUMMARY (WORKSHEET PAGE 4)

1. The score for DELAYED WORD RECALL is the total number of words recalled following the DSS and is equal to the number of words checked on Page 1, column 3. ENTER THAT NUMBER ON PAGE 4 OF THE CNF WORKSHEET, ITEM 1 (CNFA, Q.1)
2. Scoring of the DIGIT SYMBOL SUBSTITUTION (DSS) TEST is done after the participant has completed all three parts of the cognitive function interview. The DSS score is based on the number of symbols correctly coded in 90 seconds.

For participants who are unable to understand or take the test, ENTER "=" IN BOTH SCORE BOXES ON PAGE 4 OF THE CNF WORKSHEET, ITEMS 2 AND 3 (CNFA, Q.2 AND Q.3).

When part of the sample is attempted, but the participant refuses to complete the actual test, enter "=" for both scores, as above.

3. PLACE THE TEMPLATE OVER THE DSS TEST AND COUNT THE NUMBER OF CORRECT AND INCORRECT SYMBOLS. A figure is scored as correct if it is clearly identifiable as the keyed figure, even if it is drawn imperfectly or if it is a spontaneous correction of an incorrect figure.

Give 1 point for each item filled in correctly. The seven Sample items are not included in the participant's score.

Credit is not given for items completed out of sequence.

Single blank spaces between two completed items are not considered incorrectly coded symbols. Two or more blanks which occur consecutively signal the end of the task. Symbols coded after the two or more blanks are not included in totals.

If the "U" symbol is recorded as "V", give full credit.

4. ENTER THE NUMBER OF CORRECT SYMBOLS ON PAGE 4 OF THE CNF WORKSHEET, ITEM 2 (CNFA, Q.2).
5. ENTER THE NUMBER OF INCORRECT SYMBOLS ON PAGE 4 OF THE CNF WORKSHEET, ITEM 3 (CNFA, Q.3).
6. In scoring the Word Fluency test, no proper names are allowed.

Plurals or normal suffixes are not allowed and only "count" once (e.g., give, gives, giving). However a different form of the word as "gave" can be counted in addition to give.

Words like someone, something, somebody can all be "counted" separately.